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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/599,555 | 10/01/2006 | Robert Desbrandes | | 1774 |
| 64501 | 7590 | 05/30/2012 | EXAMINER | |
| E-QUANTIC COMMUNICATIONS 1, ALLEE DES CHERINIERS GIVARLAIS, FR-03190 FRANCE | | | MONDT, JOHANNES P | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2894 | | |
| | | MAIL DATE | DELIVERY MODE | |
| | | 05/30/2012 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/599,555 | DESBRANDES ET AL. |
| | Examiner | Art Unit |
| | JOHANNES P. MONDT | 2894 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 April 2012.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) Claim(s) 43-69 is/are pending in the application.
 - 5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) Claim(s) _____ is/are allowed.
- 7) Claim(s) 43-69 is/are rejected.
- 8) Claim(s) _____ is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-302) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

1. The Declarations under 37 CFR 1.132 filed as Appendix A, Appendix B and Appendix C on April 6, 2012, by Robert Desbrandes, are insufficient to overcome the rejection of claims 43-69 based upon 35 U.S.C. 101 and 112 as set forth in the last Office action because:

a. Although said declarations contain evidence of some experimental data underlying a manuscript submitted for publication, as well said manuscript itself (see Appendix C), there does not appear to be a single peer review available to examiner at this time. Clearly, the applicants are in possession or have been informed of a referee report. Every reputed journal requires at least one, and usually more than one, referee report with an adjudicator resolving any possible discrepancy between conflicting referee reports. In the absence thereof, no *evaluated, experimental data* can be said to be available that shed any light of the credibility of inventors' work. Furthermore, applicants' claims are quite extraordinary, and hence require extraordinary substantiation and verification. For example, despite a number of scientific articles the field of low energy nuclear reactions or cold fusion still was deemed lacking of utility after a thorough peer review by the U.S. Department of Energy, based on an overwhelming number of reviews among those of eighteen (18) experts in pertinent fields of scientific endeavor. Applicants may request such a review, or, in the alternative, have their invention tested by a reputed organization, such as the U.S.

Department of Energy or the National Institute of Science and Technology.

Examiner concludes that despite the experimental data made of record and the manuscript by one of the inventors applicants did not provide the required evaluated, experimental data, nor does it appear that an extensive peer review regarding applicants' invention's utility and enablement is available at this time.

b. Even arguendo, nothing in the data indicates which particular group of gamma rays is entangled, nor do the data clearly exhibit a statistically significant departure, with RMS value, from standard half-life, based on applicants' mechanism. Peculiarly, the manuscript by Van Gent ("Induced Quantum Entanglement of Nuclear Metastable States of ^{115}In ") seriously misrepresents the Einstein-Podolski-Rosen article in that nowhere do Einstein-Podolski-Rosen make any reference or comparison with General Relativity, counter to the assertion in the "Introduction", page 1. More seriously, nowhere in the Declarations or the Specification is there *any explanation and substantiation* of the basic mechanism by which irradiation by quantum entangled photons would cause anything but prompt decay if at all, said irradiation being applicants' mechanism to cause the claimed half-life's variability over time (claim 43 and all claims dependent thereon). That irradiation can cause decay through excited levels activated by said irradiation is an altogether different matter.

c. Applicants keep pointing out that the method steps in the application of the invention that leads to the product (allegedly) are enabled; yet, the question is whether or not the claimed invention as product is credible, i.e., with a half-life of

the characteristic energy being variable over time, let alone being lower by at least 40% as compared to the reference constant half-life of said characteristic energy line.

d. The article by Togan et al made of record in the final Declaration sheds no light on the utility and enablement of the instant invention, which is directed to nuclear isomers, not solid state physics, And thus pertaining to totally different forces of nature.

In light of the above, the Declarations do not substantially change the lack of credibility of the asserted utility and lack of enablement.

Response to Arguments

2. Applicant's arguments filed April 6, 2012, have been fully considered but they are not persuasive.

e. *Concerning section 4:* Examiner refers to the Response to Arguments in the prior Office Action in response to applicants' reference to the letter filed 9/20/10, the arguments of which are incorporated in Remarks by reference. Furthermore, regarding the discussion of photo-activation of isomeric nuclides nothing in it pertains to an explanation as to why the half-life of the characteristic energy line is made variable through applicants' invention. As explained in said section 4, what is at stake here is at least one definite characteristic energy line with variable half-life, not some detour through other energy levels thus speeding up decay. Applicants' provide no evidence and no substantiation of their claimed invention in this regard.

f. *Concerning section 5:* examiner refers to the prior office Action in reply to applicants' comments. Furthermore, in response to applicants' further comments the issue is not whether mixing is prohibited, but simply whether or not the invention's asserted utility is credible, whether the invention is operative, and whether or not the invention is supported by an enabling disclosure. The specification attributes the alleged variability in the half-life of the at least one characteristic energy line to irradiation with entangled photons, in particular entangled gamma rays, and while Genovese is limited to entangled photons that are visible, Genovese was cited in the office Action not as prior art reference for the current claim language, but instead as evidence how difficult it is to carry out controlled experimentation in which the entanglement is determined. That "the academic community no longer rule out entanglement of solid-state materials" is neither confirmed by Togan et al nor at all relevant to the invention as claimed, because said invention is drawn to the deexcitation probability of nuclear isomers, on which the article by Togan et al has nothing to offer. Neither has examiner ever taken the position that entanglement of nuclei can be ruled out. That "the results [of a number of experiments by inventors] were published does not, considering the mode of publication, imply any positive referee report, since anyone can "publish" in "arXiv". Therefore, the preponderance of evidence still is against the credibility of the asserted utility and, by virtue of the "use" prong of 35 U.S.C. 112, first par., by inference also against enablement.

g. *Concerning section 6* concerning enablement, examiner first refers to the discussion of section 5 supra and the causal link from lack of credible asserted or well-established utility to lack of enablement as expressed above and as expressed in the rejections set forth in section 9. Furthermore, no identification of individual object and timing is shown anywhere, whether in the specification or in any of the declarations, and hence a statement to the effect that there "are absolutely no difficulties with "identification of individual measurement object and timing" is not supported by any description; That such difficulties loom large in the art is witnessed by Genovese and the reference therein.

h. Few independent arguments are advanced in comments on *sections 7-10*, for which examiner again refers to the prior office Action. Furthermore, the question is NOT whether "[U]tility of the invention follows as modifying the half-life of metastable nuclides is useful", but instead whether such utility is credible based on the written description.

i. *Concerning section 11*, the rejection under 35 U.S.C. 112, second par., is an immediate consequence of the inadequacy of the written description and hence stands with the rejections under 35 U.S.C. 112, first paragraph.

Specification

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The Specification is objected to for failing to support the claimed invention by either a credible asserted utility or by a well-established utility, while the method as claimed is so insufficiently developed and supported in the specification as to be wholly inoperative. Please note that in present claim language the half-life of a characteristic energy line is changed, which has nothing to do with any mixing. Applicant is referred to a recent review on quantum entanglement around the time of his invention (Genovese, M., Physics Reports 413 319-396 (2005)) in which the history of research on the much simpler case of photon entanglement together with all the difficulties of resolution and timing in painstaking experimental work over decades is reviewed. See, for instance, the concluding statement at the end of section 3.3 concerning resolution difficulties, which are discussed extensive elsewhere in Genovese. In contrast, applicant hardly presents any experimental data and presents no error analysis in connection with his experimental data. Applicant fully and casually ignores the huge problem of resolution in identifying the detector signals relevant for the experiment, and of timing. The time-honored way of proceeding is through basic research, with scrutinized and peer-reviewed experimental data, complete with error analysis. This is what Aspect and co-workers, and Horne-Zeilinger, and Shimoni-Holt etc., did (see, e.g., the discussion of references 34 and 83 in Genovese). In other words, evaluated, experimental data lending credibility to applicant's claims. In the absence thereof, the inventive method is considered to lack a credible utility. No doubt the utility is not well established either.

4. The Specification is further objected to for failing to support the invention as claimed by an enabling disclosure. One of skill in the art would not know how to use the method for its stated and asserted purpose, because of the above-described difficulties with identification of individual measurement objects and timing. In this regard it is further noted that regarding the breadth of the claims it is noted that the "preamble" asserts the method to be a method of controlling a remote deexcitation of an excitation by gamma rays, for which however the specific isomeric nuclei would have to be identified by specific and extremely skillful measurement techniques including timing. The specification does not explain how this is carried out. Regarding the nature of the invention and the state of the prior art, applicants' assertion in terms of the claim language would provide a true milestone in experimental physics if reduced to practice, yet the specification does not even provide the amount and quality of quantitative results expected in a basic research article. The level of ordinary skill is wholly inadequate to carry out the experimental work needed to use the invention for its stated purpose, because no one skill in the art has thus far succeeded while the specification does not provide specific directions and evaluated, experimental data to guide one skilled in the art. The level of predictability in the art is negligible, because the method as claimed would be a pioneering effort in basic research not supported by directions from applicant in terms of adequate working examples and evaluated, experimental data. Thus basic experimental research, and hence undue experimentation would at best be required to practice the invention. In light of the foregoing considerations

examiner concludes that the invention by applicant is not enabled by the disclosure (MPEP 2164.01(a)).

Claim Rejections - 35 USC § 101 - §112

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. ***Claims 43-69*** are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a credible asserted utility or a well established utility.

The reasons for this rejection are the same as those set forth in the objection to the specification in section 4 above.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. ***Claims 43-69*** are also rejected under 35 U.S.C. 112, first paragraph.

Specifically, since the claimed invention is not supported by either a credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 43-69** are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The reason for this rejection is the same as the reason for the objection to the specification on account of the method being inoperative as set forth above in section 4.

Claims 43-69 are also rejected under 35 U.S.C. 112, first paragraph.

Specifically, since the claimed invention is not supported by either a credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 43-69** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The reasons for this rejection are the same as the reasons for the objection to the specification as set forth above in section 5.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 69-85** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The metes and bounds of the claimed invention are vague and ill-defined due to lack of written support by an enabling disclosure as set forth above (see section 10 above), rendering the claims indefinite, because what lacks disclosure is indefinite.

Conclusion

10. **THIS OFFICE ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on 571-272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHANNES P MONDT/
Primary Examiner, Art Unit 2894